

H. S. BLYNT.
GREASE LUBRICATOR.
APPLICATION FILED AUG. 4, 1909.

946,484.

Patented Jan. 11, 1910.
3 SHEETS—SHEET 1.

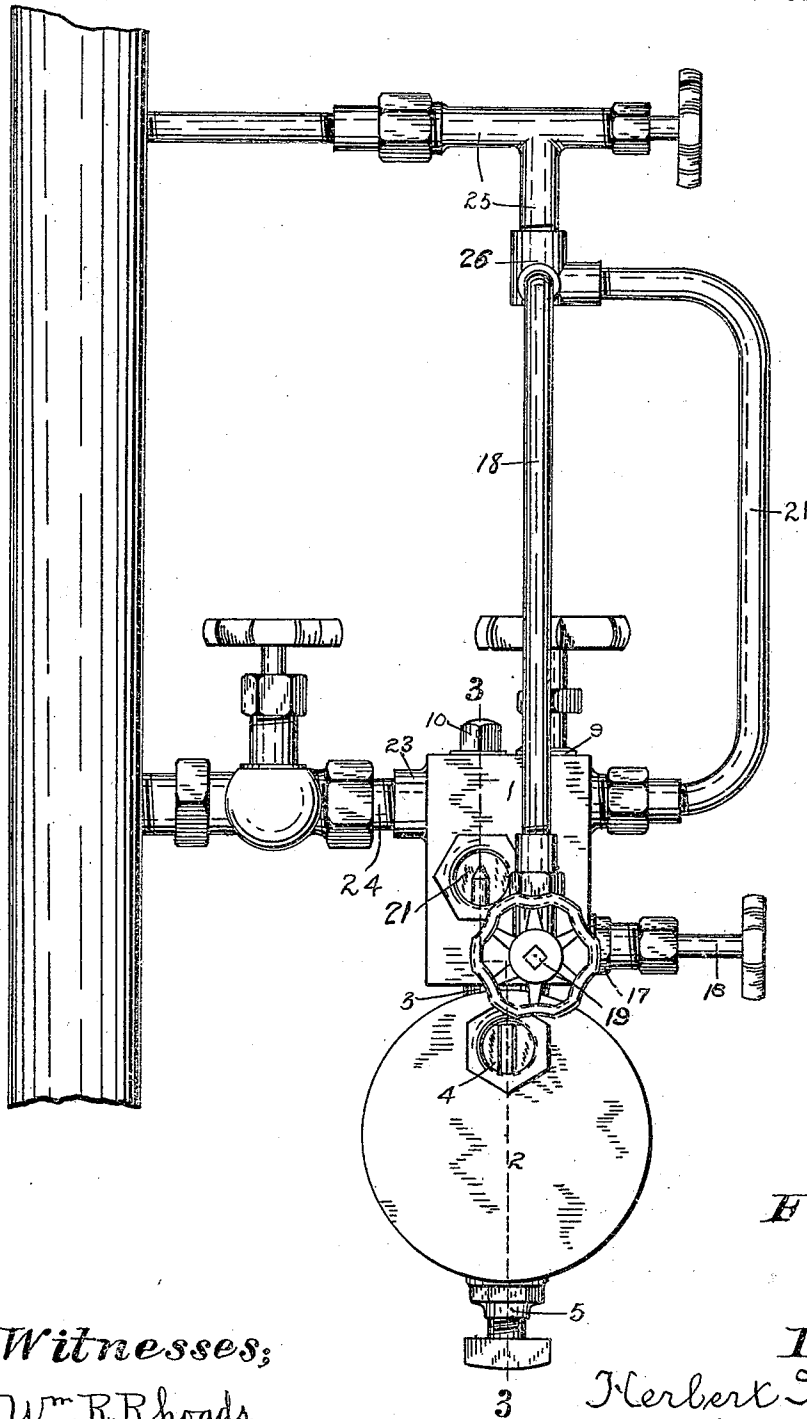


Fig. 1.

Witnesses;
Wm. R. Rhoads.
Ruth A. Miller

Inventor;
Herbert S. Blynt
By Harry Freese,
Attorney.

H. S. BLYNT.
GREASE LUBRICATOR.
APPLICATION FILED AUG. 4, 1909.

946,484.

Patented Jan. 11, 1910.

3 SHEETS—SHEET 2.

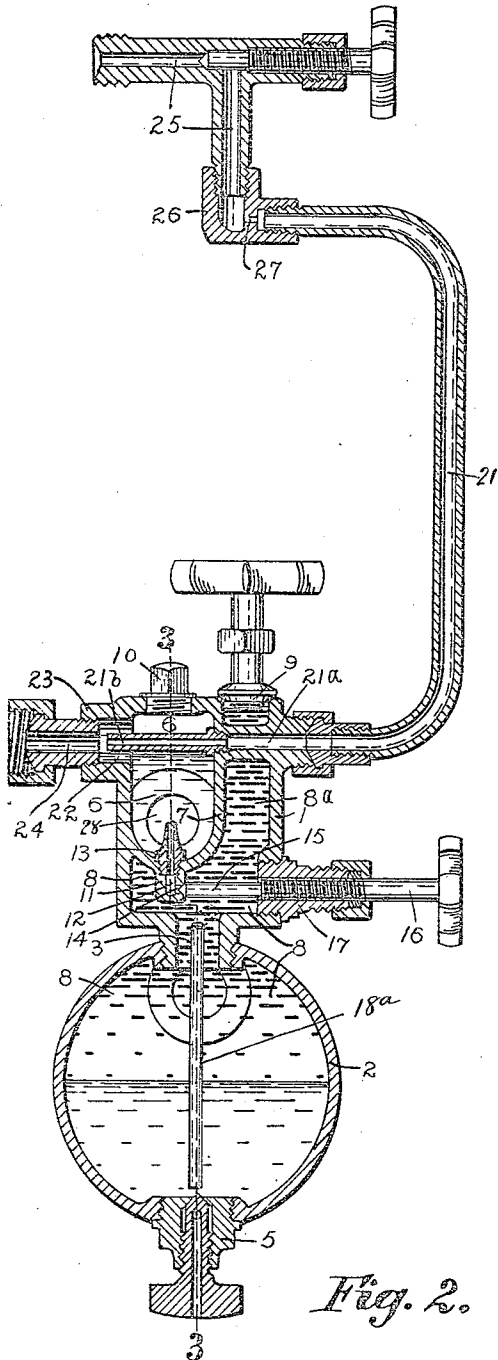


Fig. 2.

Witnesses;
Wm. R. Rhoads.
Ruth A. Miller

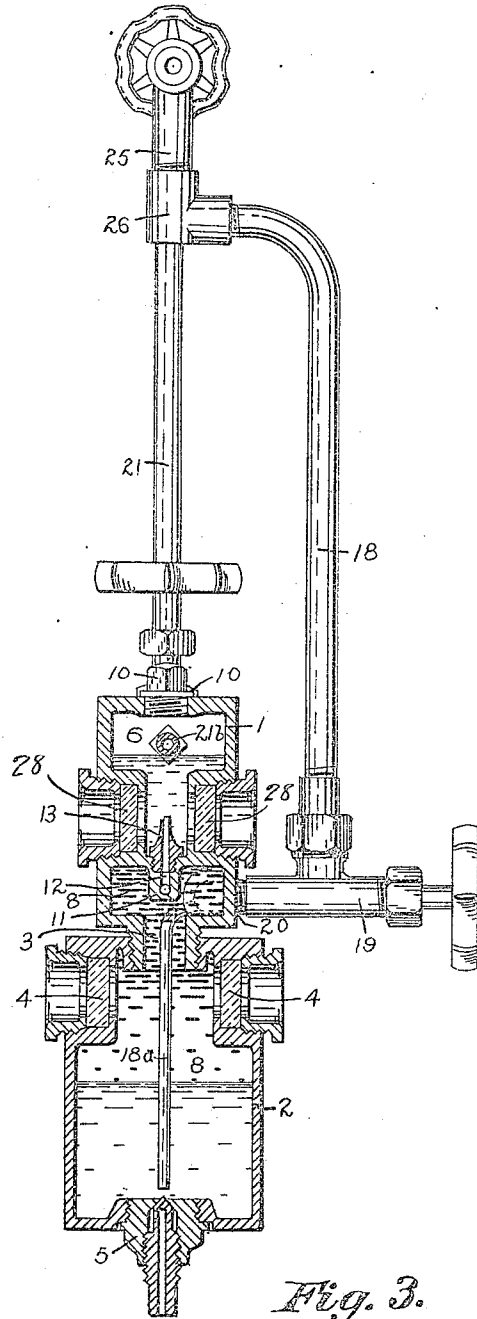


Fig. 3.

Inventor;
Herbert S. Blynt.
By Harry Grease,
Attorney.

H. S. BLYNT.
GREASE LUBRICATOR.
APPLICATION FILED AUG. 4, 1909.

946,484.

Patented Jan. 11, 1910.

3 SHEETS—SHEET 3.

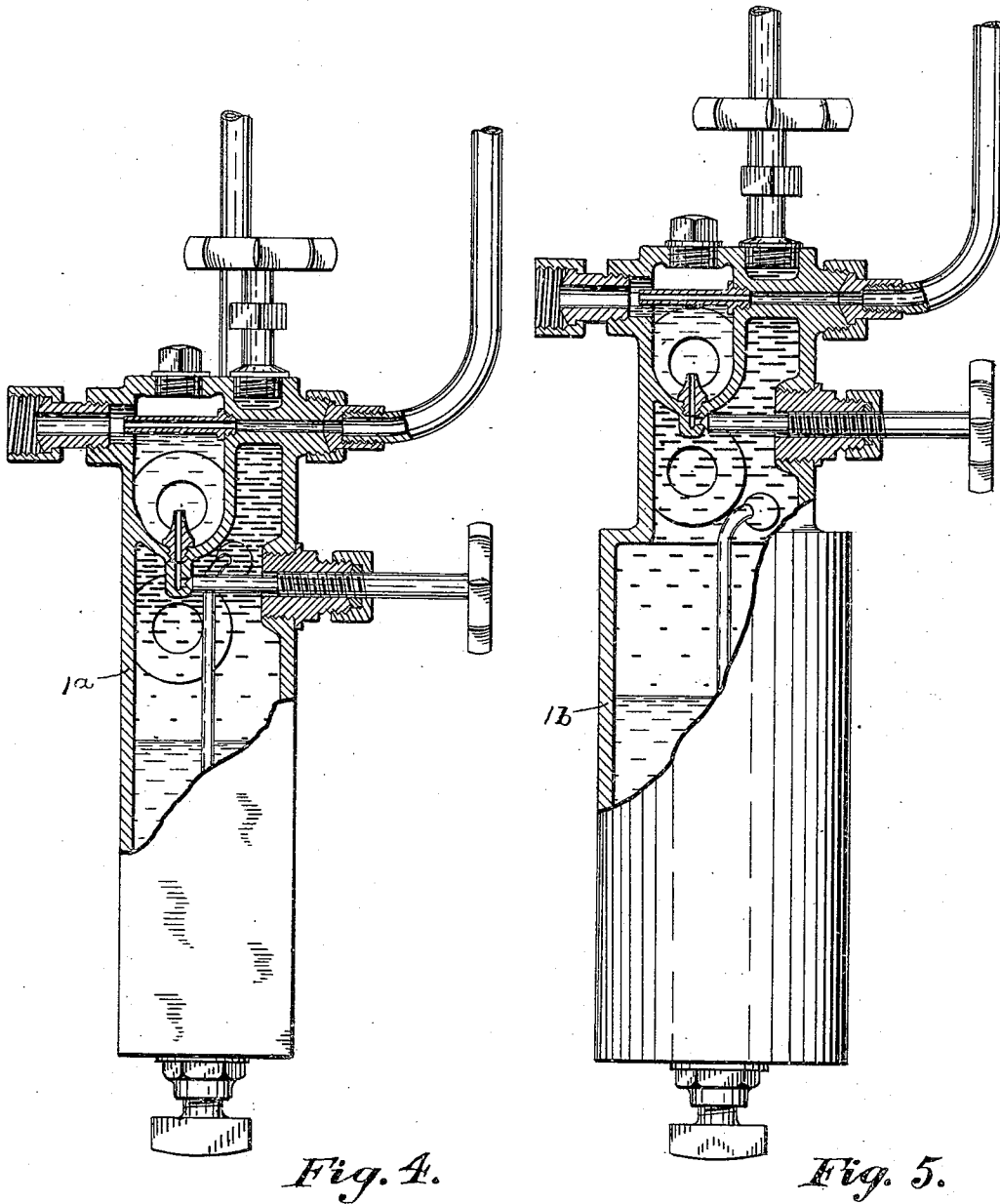


Fig. 4.

Fig. 5.

Witnesses;
Wm. R. Rhoads.
Ruth C. Miller

Inventor;
Herbert S. Blynt
By Harry Trease
Attorney.

UNITED STATES PATENT OFFICE.

HERBERT S. BLYNT, OF LOUDONVILLE, OHIO, ASSIGNOR TO THE OHIO GREASE LUBRICANT COMPANY, OF LOUDONVILLE, OHIO, A CORPORATION OF OHIO.

GREASE LUBRICATOR.

946,484.

Specification of Letters Patent.

Patented Jan. 11, 1910.

Application filed August 4, 1909. Serial No. 511,087.

To all whom it may concern:

Be it known that I, HERBERT S. BLYNT, a citizen of the United States, residing at Loudonville, in the county of Ashland and State of Ohio, have invented certain new and useful Improvements in Grease Lubricators, of which the following is a specification.

The invention relates to a steam-actuated lubricator designed and intended to be connected with a steam-line supplying the steam chest and valves of an engine; and the object of the invention is to provide a lubricator which will heat and feed grease, as well as normally liquid oil, into the steam-line under all conditions of temperature, and also in the vaporized form which is necessary for most efficiently lubricating all the parts of the engine. In lubricators of this class, difficulty has been experienced in heating the grease and maintaining it in the proper temperature for working, and also in preventing a freezing or thickening of the grease when the lubricator is exposed to the lower temperatures, or a scorching or burning of the same when the heating means are not properly arranged and controlled. Further difficulties arise from the use of exterior sight-feed lines, and also when the liquid grease is required to flow through comparatively narrow and long or tortuous channels, especially when the grease is required to flow downward to enter the sight-feed line. These more general difficulties are overcome and other ancillary advantages are attained by the construction and arrangement shown for a preferred embodiment of the invention, in the accompanying drawings, forming part hereof, in which—

Figure 1 is a side elevation of the improved lubricator connected with a supply-line pipe; Fig. 2, a similar view in section, omitting the supply-line; Fig. 3, a section on line 3—3, Figs. 1 and 2; Fig. 4, a side elevation, partly in section, showing a modified form of the lubricator; and Fig. 5, a similar view showing another modified form of the lubricator.

Similar numerals refer to similar parts throughout the drawings.

The case of the lubricator is preferably made of two detachable sections, 1 and 2, the upper section 1 being preferably joined to the lower section 2 by means of the comparatively large and open neck 3 which affords

free and unobstructed communication between the two sections. By this arrangement, the capacity of the lubricator can be varied at will by merely increasing or decreasing the size of the lower section, without changing or affecting in any manner the working parts which are all secured in or attached to the upper section. The usual glass sight-windows 4 are preferably provided in the lower section, and the usual drainage valve 5 is provided in the bottom thereof.

The collecting chamber 6 is formed, preferably in one side of the upper portion of the case, by means of the thin partition 7 which separates the inner side and bottom of this chamber from the grease reservoir 8, which reservoir occupies the entire remainder of the cavity of the case. The filling-plug 9 is preferably located in the top of the case over the portion 8^a of the reservoir which extends upward alongside the collecting chamber, and the screw-plug 10 is preferably located in the top of the case over the collecting chamber to give access into the same. The boss 11 is formed on the bottom of the collecting chamber in which boss is provided the vertical port 12. This port opens above into the grease nipple 13 which is seated in a countersink around the upper end of the port, and below through the aperture 14 which is preferably located in one side of the boss, which aperture constitutes a seat for the valve 15 formed on the end of the stem 16, which enters the reservoir through the bushing 17 in the wall of the case.

The condensing pipe 18 is provided with the valve 19 and enters the reservoir, as at 20, preferably through the side wall of the upper section of the case, whence it is connected to and communicates with the condensing tube 18^a which extends downward through the neck and opens in the bottom portion of the reservoir. The heating pipe 21 is connected to and communicates with the outer end of the heating tube 21^a which extends transversely through the cavity of the upper end of the reservoir, and is thence extended by the heating nipple 21^b through the cavity of the adjacent upper end of the collecting chamber and terminates in the aperture 22 which is formed in the boss 23. In the outer end of this aperture is connected the feed pipe 24 which leads to and communicates with the supply-line pipe, and

constitutes the outlet from the collecting-chamber.

The opening of the heating nipple 21^b in the enlarged mouth of the feed pipe which is formed by the aperture 22, causes the steam to discharge directly into the feed pipe, and there is no tendency of the steam to expand in the upper portion of the collecting-chamber or to agitate the water therein; and the condensation from the heating line is free to drip from the end of the heating nipple and to flow backward into the collecting-chamber, whereby the same is kept full of condensation water up to the level of the overflow through the feed pipe.

The condensing-pipe 18 and the heating-pipe 21 are connected to the supply-line at a convenient point above the lubricator, as by means of the valve-controlled steam-pipe 25 and the three-way fitting 26. The flow of steam through the condensing-pipe is controlled by the valve 19, but the flow of steam through the heating-pipe is preferably obstructed by the reduced size of the aperture 27 in the three-way fitting. Furthermore, the opening through the heating nipple is preferably reduced as compared with the openings through the heating-pipe and heating-tube, which reduced opening serves to accelerate the discharge of steam from the nipple.

In the operation of the lubricator, the live steam passing through the heating-tube heats and liquefies the grease from above downward, and the condensation from this tube together with the condensation of the steam which backs from the supply-line through the feed-pipe into the collecting-chamber, fills this chamber up to the line of the overflow through the feed-pipe. The water from the condensing-tube fills the lower portion of the reservoir and by its greater weight forces the grease to the upper portion thereof in the usual manner. By opening the valve 15, the liquid grease flows freely through the port 12 and grease nipple 13, and gradually forms a drop on the end of the nipple in the water around the same. When the drop attains a sufficient size, it rises by its own buoyancy through the water to the surface thereof, whence it flows outward into and through the feed-pipe 24.

The outward flow of the drop of grease is accelerated by the suction caused by the discharge of steam from the heating nipple and as soon as the drop flows in front of the same it is impinged by the hot steam and is driven or blown through the feed-pipe into the supply-line. At the same time, the grease is not only heated to the temperature required for properly assimilating with the live steam, but it is also finely divided or atomized so that it will immediately vaporize upon entering the supply-line, and thus most efficiently lubricate the engine. The usual

glass sight-windows 28 are preferably provided in the walls of the collecting-chamber, through which sight glasses the formation and rising of the drop of liquid grease can be seen.

It is evident that it is not essential to make the case in two sections, as shown in Figs. 1, 2 and 3 of the drawings, but that the lower portion of the case can be made integral with the upper portion as shown at 1^a in Fig. 4 and 1^b in Fig. 5, without affecting in any manner the operating features of the improved lubricator. And manifestly, the use of the heating-tube is not essential in cases where the outside temperature or the character of the lubricant does not require the latter to be heated, in which event the oil flows from the collecting-chamber in the usual manner; but it is generally preferable to use the heating-pipe for the purpose of atomizing and thus vaporizing the grease in the manner described above.

I claim:

1. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a condensing pipe opening in the reservoir, a valve-controlled port having a nipple opening from the reservoir into the lower part of the collecting-chamber, a feed-pipe having an enlarged mouth opening from the upper part of the collecting-chamber, and a heating-tube extending through the adjacent upper parts of the reservoir and the collecting-chamber and opening in the enlarged mouth of the feed-pipe.
2. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a condensing pipe opening in the reservoir, a valve-controlled port having a nipple opening from the reservoir into the lower part of the collecting-chamber, a feed-pipe opening from the upper part of the collecting-chamber, and a heating-tube extending through the adjacent upper parts of the reservoir and the collecting-chamber.
3. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a condensing pipe opening in the reservoir, a valve-controlled port having a nipple opening from the reservoir into the lower part of the collecting-chamber, a feed-pipe opening from the upper part of the collecting-chamber, and a heating-tube extending through the reservoir and into the adjacent upper part of the collecting-chamber.
4. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a valve-controlled port having a nipple opening from the reservoir into the lower part of the collecting-chamber, a feed-

pipe having an enlarged mouth opening from the upper part of the collecting-chamber, and a heating-tube extending through the adjacent upper parts of the reservoir and the collecting-chamber and opening in the enlarged mouth of the feed-pipe.

5. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a valve-controlled port having a nipple opening from the reservoir into the lower part of the collecting-chamber, a feed-pipe opening from the upper part of the collecting-chamber, and a heating-tube extending through the adjacent upper parts of the reservoir and the collecting-chamber.

6. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a valve-controlled port having a nipple opening from the reservoir into the lower part of the collecting-chamber, a feed-pipe opening from the upper part of the collecting-chamber, and a heating-tube extending through the reservoir and into the adjacent upper part of the collecting-chamber.

7. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a feed-pipe having an enlarged mouth opening from the upper part of the collecting-chamber, and a heating-tube extending through the adjacent upper parts of the reservoir and the collecting-chamber and opening in the enlarged mouth of the feed-pipe.

8. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a feed-pipe opening from the upper part of the collecting-chamber, and a heating-tube extending through the adjacent upper parts of the reservoir and the collecting-chamber.

9. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a feed-pipe opening from the upper part of the collecting-chamber, and a heating-tube extending through the reservoir and into the adjacent upper part of the collecting-chamber.

10. A lubricator including a case forming a reservoir and composed of two separable sections connected by an open neck affording unobstructed communication between the sections, and a thin partition in the upper section forming a collecting-chamber in the upper part thereof.

11. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a condensing pipe opening in the reservoir, a valve-controlled port having

a nipple opening from the reservoir into the lower part of the collecting-chamber, a feed-pipe having an enlarged mouth opening from the upper part of the collecting-chamber, and a heating-tube extending through the cavities of the adjacent upper parts of the reservoir and the collecting-chamber and opening in the enlarged mouth of the feed-pipe.

12. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a condensing pipe opening in the reservoir, a valve-controlled port having a nipple opening from the reservoir into the lower part of the collecting-chamber, a feed-pipe opening from the upper part of the collecting-chamber, and a heating-tube extending through the cavities of the adjacent upper parts of the reservoir and the collecting-chamber.

13. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a condensing pipe opening in the reservoir, a valve-controlled port having a nipple opening from the reservoir into the lower part of the collecting-chamber, a feed-pipe opening from the upper part of the collecting-chamber, and a heating-tube extending through the cavity of the reservoir and into the adjacent upper part of the collecting-chamber.

14. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a valve-controlled port having a nipple opening from the reservoir into the lower part of the collecting-chamber, a feed-pipe having an enlarged mouth opening from the upper part of the collecting-chamber, and a heating-tube extending through the cavities of the adjacent upper parts of the reservoir and the collecting-chamber and opening in the enlarged mouth of the feed-pipe.

15. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a valve-controlled port having a nipple opening from the reservoir into the lower part of the collecting-chamber, a feed-pipe opening from the upper part of the collecting-chamber, and a heating-tube extending through the cavities of the adjacent upper parts of the reservoir and the collecting-chamber.

16. A lubricator including a case forming a reservoir and having a partition forming a collecting-chamber in the upper part of the reservoir, a valve-controlled port having a nipple opening from the reservoir into the lower part of the collecting-chamber, a feed-pipe opening from the upper part of the collecting-chamber, and a heating-tube

extending through the cavity of the reservoir and into the adjacent upper part of the collecting-chamber.

17. A lubricator including a case forming
5 a reservoir and having a partition forming
a collecting-chamber in the upper part of
the reservoir, a feed-pipe having an enlarged
mouth opening from the upper part
10 of the collecting-chamber, and a heating-
tube extending through the cavities of the
adjacent upper parts of the reservoir and
the collecting-chamber and opening in the
enlarged mouth of the feed-pipe.

18. A lubricator including a case forming
15 a reservoir and having a partition forming
a collecting-chamber in the upper part of
the reservoir, a feed-pipe opening from the

upper part of the collecting-chamber, and a
heating-tube extending through the cavities
of the adjacent upper parts of the reservoir 20
and the collecting-chamber.

19. A lubricator including a case forming
a reservoir and having a partition forming
a collecting-chamber in the upper part of
the reservoir, a feed-pipe opening from the 25
upper part of the collecting-chamber, and a
heating-tube extending through the cavity
of the reservoir and into the adjacent upper
part of the collecting-chamber.

HERBERT S. BLYNT.

Witnesses:

WILLIAM R. REED,

WILLIAM J. WEIRICK.